

J. New York Entomol. Soc. 93(4):1279–1280, 1985

The Spiders of Great Britain and Ireland.—Michael J. Roberts. 1985. Harley Books, Martins, Great Horkesley, Colchester, Essex CO6 4AH, England. Volume 1 (Atypidae—Theridiosomatidae), 229 pp., £45.00; Volume 3 (Colour Plates), 256 pp., £55.50 (combined price for Volumes 1 and 3, £85.00).

For spiders, as for many other groups of arthropods, a page of illustrations often provides more useful taxonomic information than could a dozen pages of text. Most significant works on spider taxonomy are consulted as much for their figures as for their other content (Simon's classic *Histoire Naturelle des Araignées*, published between 1892 and 1903, and covering the world fauna at the generic level, is one of the few obvious exceptions). Roberts' projected three-volume series on British spiders, of which Volumes 1 and 3 are now available, exemplifies the pattern: illustrations are its *raison d'être*.

Volume 3 consists of 237 full page, large format, color plates; most pages are devoted to a dorsal view of a single spider, accompanied by a line sketch showing the actual size of the specimen. About 30 plates depict four specimens instead of one, and in these cases the legs are indicated only by outline sketches of their more proximal segments. The fineness of detail is unsurpassed in the existing literature. From the first plate, a magnificent painting of *Atypus* (the only British mygalomorph, or tarantula-like, spider), through the deep reds of *Dysdera*, the delicate tans of *Psilochorus*, and the vibrant greens of *Micrommata* and *Diaea*, colors and patterns are meticulously rendered and lovingly reproduced. Only a superbly talented artist who is also a practiced arachnologist could have produced these portraits; remarkably, the volumes were executed while their author was a medical student and practicing physician. The long British tradition of distinguished amateur natural history is evidently quite alive, and Roberts' graphic demonstration of the beauty of spiders might even lure some of his colleagues away from the butterflies and beetles!

The first two volumes (the second, on the Linyphiidae, is scheduled to appear in 1986) contain an account of the spider species recorded from Britain and Ireland, accompanied by detailed (mostly black and white) illustrations of male and female reproductive organs. As Roberts notes, "The nature of this book means inevitably that it is concerned mainly with corpses and genitalia." The genitalic figures amply meet his stated goal of making "the identification of British spiders a little easier." Interestingly, Roberts comments (pp. 26–27) that

When comparing the male palp or epigyne of a specimen with the illustrations in this book, one should get into the habit of looking at the *whole structure*. Most people will have seen the paired cartoons in newspapers where one differs from the other and the reader has to 'spot the differences'; the perceptive approach needed for this is also the best approach when examining spider genitalia. In many works which illustrate spider palps, only a part of the structure is shown, or the reader's attention is directed to one particular aspect of the organ as being *the* diagnostic feature. Whilst this may in the short term sometimes be helpful, and occasionally is necessary, it can be misleading and discourage observation of other structures. As it is, many experienced arachnologists, when identifying specimens, spend their time looking at palps and epigynes and scarcely look at the whole animal. If taken a stage further one can be led into just looking at the tibial

apophyses of the palp in one genus, or the conductors in another. In this situation, any new species cropping up may be missed if the differences in its palpal structure do not occur in the appropriate conventional diagnostic area.

Given this concern, it is most perplexing that Roberts follows Locket and Millidge's *British Spiders* in providing, for the males of many genera, only a retrolateral view of the palp. Most details of palpal structure can be observed only in ventral view; although retrolateral views may suffice to distinguish the (known) British species, they do not allow workers elsewhere to judge whether their specimens are conspecific with, or closely related to, British ones.

The systematic treatment is a mixture of traditional and modern elements, but Roberts does generally refer to recent works even when he opts to ignore their nomenclatural implications in his "compromise" classification. He recognizes such classical but artificial assemblages as the Cribellatae and Haplogynae (although the family Pholcidae is curiously removed, without comment, from the latter group). Also curious is the absence of references to many obviously diagnostic generic synapomorphies. For example, neither the keys, descriptions, nor illustrations indicate that specimens of *Gnaphosa* have a serrate cheliceral keel, that those of *Callilepis* have a cheliceral lamina, that zelotines (here lamentably lumped into a single genus) have preening combs on metatarsi III and IV, or that an abdominal stridulatory file characterizes *Antistea*. But such information is available elsewhere, and Roberts' artwork is not. All spider enthusiasts will want the entire set, and aficionados of fine natural history illustration should snatch up Volume 3.—*Norman I. Platnick, Department of Entomology, American Museum of Natural History, New York, New York 10024.*

J. New York Entomol. Soc. 93(4):1280–1281, 1985

Population Biology and Evolution.—K. Wohrmann and V. Loeschcke (eds.). 1984. Springer-Verlag, Berlin. 270 pp. \$40.00.

In the early to mid 1960's attempts were being made to bring together ecology, population genetics, and developmental biology to form a unified field of evolutionary biology. One of the most important works to come out of this period was *Population Biology and Evolution*, the proceedings of a symposium held in 1967. Just the year before, however, the electrophoretic bomb had been dropped, and we all know what happened: for at least a decade the primary aim of evolutionary biology became the melding of electrophoretically-determined allele frequencies with the models of theoretical population genetics. Although electrophoresis has provided invaluable information on taxonomic questions, population structure, breeding systems, and so on, it has not, in my opinion, shed much light on the question it was initially supposed to answer: What is the genetic basis of evolutionary change? To answer this question, one must focus on phenotypes—how they are produced and how selection acts on them. Thus, we have another volume, the proceedings of a symposium held in 1983, entitled *Population Biology and Evolution*, whose stated goal is to determine how population genetics and evolutionary ecology can be unified. The book is divided into eight sections: genotype and phenotype, quantitative characters and selection in natural populations, theoretical aspects of density regulation and life histories, genetic